iRZ Q24PL001 GPRS class 10 GSM modem

USER MANUAL

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1. Safety Requirements

Restrictions for the usage of the device in the vicinity of other electronic devices:

- turn off the modem in hospitals or in the vicinity of medical equipment (e.g. cardiostimulators, hearing aids). It can cause interference for medical equipment;
- turn off the modem in aircrafts. Take measures against accidental activation;
- turn off the modem in the vicinity of gas-filling stations, chemical enterprises, blasting work places. It can cause interference to technical devices;
- at a short range the modem may cause harmful interference to TV and radio receivers.

Prevent the modem from dust and moisture.

Improper use deprives you of all warranty claims.

2. General Information

2.1. Purpose of the device

The modem iRZ Q24PL001 is a structurally accomplished GSM modem designed for reception and transmission of data, text messages and telecopies. It is excellently adjusted both for mobile Internet Access and for industrial applications — telemetry, wireless data collection from sensors, remote surveillance, monitoring and signaling.

The modem is assembled based on the GSM module MC55i Cinterion. The control is performed by means of standard AT commands. The modem is equipped with light-emitting diodes (LEDs) enabling to monitor the status of connection.

2.2. Configuration

Complete set of the GSM modem IRZ Q24PL001:

- modem IRZ Q24PL001,
- label,
- factory box.

2.3. Parameters

Basic parameters:

- frequency ranges: GSM 850/900/1800/1900 mHz;
- power output:
  - 2W (class 4 for EGSM900),
  - 1W (class 1 for GSM1800),
- GPRS class 10;
- MC class B;
- CSD up to 14.4 kbps;
- SMS;
- voice transmission;
- fax group 3: class 1.

Electric power supply:

- power supply voltage from 9 to 30 V;
- absorbed current not more than:
  - with power supply voltage +12 V – 300mA;
  - with power supply voltage +24 V – 150mA.

Physical parameters:

- size not more than 76x53x31 mm,
- weight not more than 100 g.,
- operating-temperature range from -20°C to +50°C,
- storage temperature range from -40°C to +65°C.

Interfaces:

- connector RJ11 for power supply connection,
- connector DB15 for connection of the data cable RS-232,
- audio interface connection,
- connector SMA for GSM antenna connection.

2.4. Exterior appearance

Modem Q24PL001 is a compact device designed in solid and lightweight aluminum housing. The exterior appearance is represented on Fig. 1.4.1 and Fig.1.4.2.

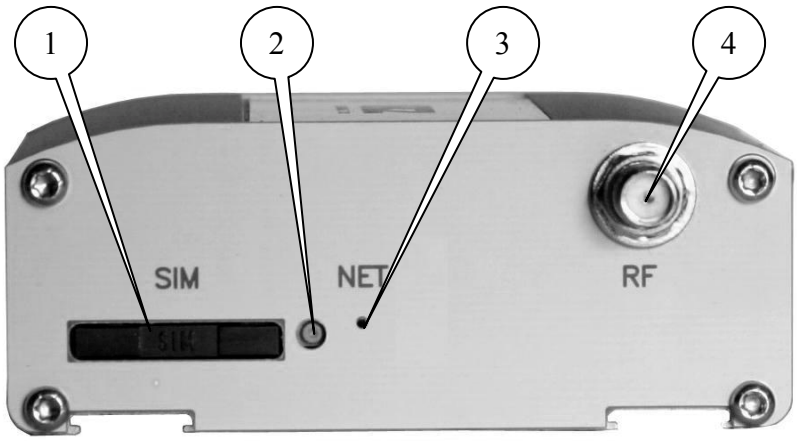

Fig.2.4.1 Front view.

Fig.2.4.2 Back view.

On the figures the digits signify the following:

1. SIM card tray,
2. SIM card tray extracting button,
3. network LED indicator,
4. connector SMA for GSM antenna connection.
5. Connector for power supply connection,
6. Connector DB15 (RS232) for data cable connection and audio interface,

2.5. Interfaces

2.5.1. Connector DB15 (RS232) (RS232, audio interface)

The connector is used for connection to the control device, exchange protocol RS232.

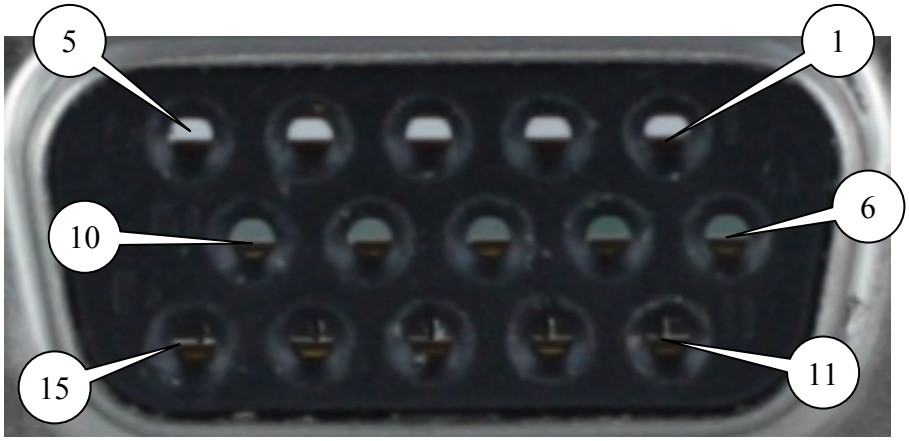

Fig.2.5.1 Connector DB15

Table 2.5.1 Purpose of the connector pins.

Contact	Signal	Direction	Purpose
1	DCD	Modem-PC	Availability of carrier wave
2	TXD	PC-Modem	Data transmission
3	-	-	not used
4	MICP	PC-Modem	Non-inversed microphone and power supply input
5	MICN	PC-Modem	Inversed microphone input
6	RXD	Modem-PC	Data reception
7	DSR	Modem-PC	Readiness of data
8	DTR	PC-Modem	Availability of data receiver
9	GND	general	System housing
10	SPKP		Non-inversed headphone output
11	CTS	Modem-PC	Availability of transmission
12	RTS	PC-Modem	Request for transmission
13	RI	Modem-PC	Call signal
14	RESET	PC-Modem	Reset, active low
15	SPKN	Modem-PC	Inversed headphone output

2.5.2. Power supply connector

The connector is used for connection of electric power supply.

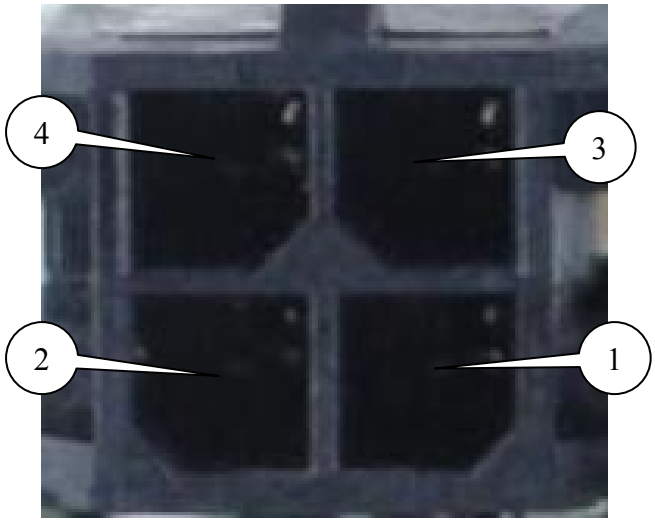

Fig.2.5.2 Power supply connector

Table 2.5.2 Purpose of power supply connector pins.

Contact	Signal	Purpose
1	GPIO	Digital Input / Output
2	INTR	Synchronized interrupt output, active low
3	GND	System housing
4	+ 12B	Positive pole of DC supply voltage. Protected with a fuse and the protection circuit against voltage-surge (with voltage infeed rate more than 30V) and incorrect polarity.

2.6. Modem Status Indication

LED indication is provided in the modem for connection status indication.

Table 2.6.1 Connection status indication

Indication mode	Operation mode
Turned off	Modem is turned off or there is an emergency situation
600 ms on / 600 ms off	Modem is not registered in the network
75 ms on / 3 s off	Modem is registered in the network

3. Connection and Setting Up

3.1. Connection

Before feeding the power supply you need to install the SIM card in the modem (the SIM card must be enabled). To do this, you need:

- to extract the SIM tray by pressing the SIM tray extract button (Fig. 2.4.1);
- to install the SIM card into the SIM tray;
- to insert the SIM tray with the SIM card into the modem.

No strong physical efforts must be applied while installing the SIM card.

Connect the GSM antenna to the antenna connector, as well as the commutating cable (RS232). Feed power supply to the modem through the connector RJ11 (Fig. 2.4.2).

Note: GSM antenna, data cables and electrical power unit are not included in the complete set configuration.

After the power supply feeding, registration occurs automatically, which is signaled by the green indicator frequent flashing. After the registration is completed, the modem jumps to the operating mode, the green indicator flashes less frequently (Table 2.6.1).

Note: GSM antenna, switching cables and power supply not included in complete set.

3.2. Control, Restarting and Power Off

The modem control is performed by standard AT commands. For additional information and support visit the manufacturer's site – *www.radiofid.ru*.

Modem restarting can be carried out by the following ways:

- by the program method through AT commands,
- by temporary power-off.